

REMARKS

The last Office Action has been carefully considered.

The Examiner's indication of the allowability of claims 41, 47-49, 53 and 59-61 has been gratefully acknowledged. In connection with this indication corresponding claims have been amended to make them independent, and the claims indicated as allowable by the Examiner should be considered now as being in allowable condition.

The claims are also rejected by the Examiner over the Valeo reference taken singly or in combination with the Reynolds Aluminum reference and the Flemmer patent.

The Examiner indicated that the priority for claim 28 is questionable. In connection with this, applicants wish to make the following remarks.

Claim 28 defines the following features.

A. A method of producing curved lengths of spring bend band steel, comprising the steps of

B. Bending a spring band steel which is made of lengths of spring band steel that adjoin one another and are of one piece with one another

C. Between three support points which are spaced from each other in a spring band steel advancing direction and rest against alternating band sides of the spring band steel

D. At a subsequent support point downstream of the three support points, bending by a lesser bending degree than during the bending by the three support points in an opposite direction

E. Cutting the length of spring band steel that is bent from the spring band steel

F. Establishing the subsequent support point as a moveable reverse bending roller, and controlling a movement of the reverse bending roller by a numerical control unit.

The feature A has a support in the original international application on page 1 starting from line 21, wherein it is stated that the method according to the invention and the device according to the invention are provided for producing curved lengths of spring band steel.

The feature B follows from the part of the specification on page 2 starting from line 5, where it is disclosed that the bending and reverse bending is performed with continuous advancing feed of a spring band. Further, on page 4, starting from line 24 it is stated that in the spring band individual, homogenous lengths of spring band steel are continuously fixed one after another. In Figure 1 a roll 15 is shown, from which the spring band is unwound and guided through the bending and reverse bending unit.

The bending unit of feature C is described in detail on page 5, starting from line 20. It contains three support points spaced apart from one another, which alternately rest against different band sides one after the other in the travel direction of the spring band steel.

The feature D has a support also on page 2, starting from line 5, where the reverse bending is explained. Furthermore, on page 6, starting from line 6 it is disclosed that the reverse bending unit is formed by a fourth support point operating on the same band side of the spring band as the central support point of the bending unit or in other words the bending roller 27. The subsequent reverse bending unit is clearly shown in Figure 1.

The feature E can be also derived from the drawings or also on page 2, starting from line 5, where it is stated that during the cutting of the

spring band lengths correspondingly a shorter transport stop is introduced. The feature F is described on page 6, starting from line 11. It is stated there that the roller axis of the reverse bending roller is also formed displaceable laterally to the spring band in direction of the band thickness. The displacement of the reverse banding roller, or vertical movement, is executed by an adjusting motor which is controlled by a numerical control unit. This feature can be also clearly recognized by a person skilled in the art from Figure 1.

While the description shows one or several possibilities of realization of the invention, it is clear that many further details in the shown embodiment are pointed out in this embodiment, without forcing the person skilled in the art to use actually all the details. It is therefore believed that all features of claim 28 can be considered as having support in the original specification so that the priority can be justifiably claimed from it.

Also, all features of claim 40 defining a device in accordance with the present invention have a support in the original specification for the same reasons.

In view of this, it is believed that the patent document WO '408 can not be considered as a valid reference and should be withdrawn.

U.S. patent to Flemmer shows and describes a bending device for three-dimensional bending of wire frames for glasses. For this purpose two bending devices are arranged one behind the other, as shown in Figure 3, positions 103 and 106. These bending devices can be designed as shown in Figures 4A to 4C or in Figures 8A and 8B. The bending device shown in Figures 4A-4C is formed as a device, with which the wire 11 is guided directly over four rollers 401-404, for bending by one roller 406 or another roller 407 downwardly or upwardly. This arrangement does not correspond to the three roller bending device of the applicants' invention in which three bending rollers are arranged alternately at different band sides.

The bending device shown in Figures 8a and 8b has a complicated frame with three input rollers 831, 832, two output rollers 833, 834 and two differently arranged central rollers 815, 816, rotatably suspended by means of an axle 841.

Both bending devices shown in Figures 4 and 8 of these references do not have a reverse bending unit.

In the patent to Flemmer the complete bending is performed over two independent bending units, wherein the bending accuracy must be increased by a post-adjustment, as explained in column 2, lines 54-58. Moreover, it is proposed to operate the system backwards, so that an

increase accuracy can be obtained, as explained in column 3, lines 1-10. in this case it is absolutely impossible to provide a reverse bending unit as in the applicant's invention, since the bending radius produced by the reverse bending rollers in the bending unit would be again deformed. A person skilled in the art would avoid making a reverse bending unit in form of four rollers.

Also, the bending unit shown in Figures 8a and 8b can not be designed with a reverse bending unit in form of four rollers in correspondence with the present invention. They must be arranged outside of the frame 842 and thereby would endanger the movability of the whole arrangement. In column 9, starting from line 18 the operation of the device is described and the free movability is explicitedly explained, in particular in column 9, lines 33-35.

A bending device which has a bending unit with three bending rollers and a reverse bending roller is disclosed in the Reynolds reference. It deals with an aluminum profile which is prepared to the correct length, to be bent to a closed circle. The rollers are pre-adjusted and the circle with the constant radius is bent in one path. Beginning and end of the aluminum profile are located directly opposite to one another and fixedly connected with one another. Such a device requires no electronic control. Also it is

necessary to operate with profiles which are preliminarily prepared to the correct length.

It is impossible to comprehend how the bending unit of the Reynolds reference can be incorporated in the bending device of the Flemmer reference. In the Flemmer reference the basic concept is to obtain optimal bending results, for example by reversing of the wire movement or by a free movability around at least one axis of the bending device. A person skilled in the art would have to carry out significant structural changes, and in particular in such a manner that the main teachings of the Flemmer reference and the Reynolds reference should be completely lost. It is therefore believed that a combination of two references having such significant differences is impossible and can be equated only with a hindsight which is of course not permissible.

In connection with this it is believed to be advisable to cite the decision Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959) in which the following was stated:

"If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious".

The Court reversed the rejection in this case holding that the "suggested combination of references would require a substantial

reconstruction and redesign of the elements shown in (the primary reference) as well as a change in the basic principle under which the (primary reference) construction was designed to operate”.

It is believed that the above cited decision is clearly applicable to the combination of the Reynolds and Flemmer reference suggested by the Examiner.

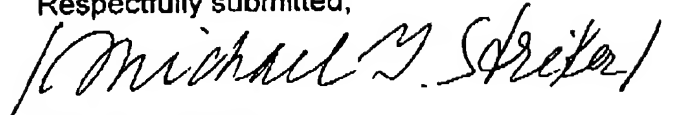
It is therefore respectfully submitted that claim 28 should be considered as patentably distinguishing over the art and should be allowed, together with the dependent claims which depend on it.

Reconsideration and allowance of the present application is most respectfully requested.

Should the Examiner require or consider it advisable that the specification, claims and/or drawings be further amended or corrected in formal respects in order to place this case in condition for final allowance, then it is respectfully requested that such amendments or corrections be carried out by Examiner's Amendment, and the case be passed to issue. Any costs involved should be charged to the deposit account of the undersigned (No. 19-4675). Alternatively, should the Examiner feel that a personal discussion might be helpful in advancing this case to allowance, he is invited to telephone the undersigned (at 212-687-5068).



Respectfully submitted,

A handwritten signature in black ink, appearing to read "Michael J. Striker". The signature is written in a cursive, flowing style with a large initial "M".

Michael J. Striker  
Attorney for Applicants

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